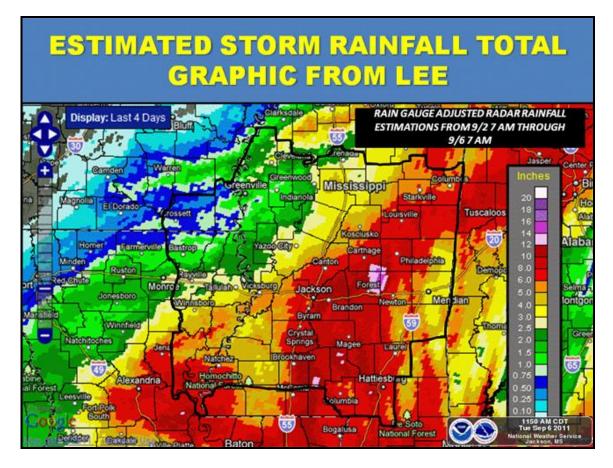
NWS FORM E-5 (11-88) (PRES. by NWS Instruction	U.S. DEPARTMENT OF COMMERCE IATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION 10-924) NATIONAL WEATHER SERVICE	WFO Jackson, Mississippi		
MONTHLY RE	PORT OF HYDROLOGIC CONDITIONS	REPORT FOR: MONTH YEAR September 2011		
	lydrometeorological Information Center, W/OH2 IOAA / National Weather Service	SIGNATURE Alan E. Gerard, Meteorologist In-Charge		
	1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283	DATE 10/12/2011		
•	occurs, include miscellaneous river conditions, such as sign and hydrologic products issued (NWS Instruction 10-924)			

Synopsis...

The month of September was characterized mostly by the heavy rainfall event triggered by Tropical Storm Lee and its remnants. Rainfall for the month was above normal thanks to Lee. Temperatures were 2 to 4 degrees below normal thanks to the well below normal temperatures which occurred following Lee.

The month started with a Tropical Depression in the southern Gulf of Mexico. The system was upgraded to Tropical Storm Lee on the 2nd. It moved into South Louisiana south of New Iberia during the early hours of the 4th. At this time, a cold front in Arkansas began moving into the Hydrologic Service Area (HSA). Heavy rainfall occurred across areas south of I-20. The remnants of Lee merged with the cold front as it pushed into South Louisiana during the early hours of the $5^{\rm th}$. From the evening of the $4^{\rm th}$ and into the middle of the day on the 5th, another band of heavy rainfall set up from southern sections of Northeast Louisiana to Northeast Mississippi. Tropical Storm Lee produced rainfall totals from 3.00 to 14.00 inches along and southeast of the Natchez Trace Parkway and extreme southern portions of Northeast Louisiana. From 0.50 to 3.00 inches of rainfall occurred northwest of the Natchez Trace. Drought conditions across Northeast Louisiana, Southeast Arkansas, and West Mississippi saw significant improvement while conditions in the remainder of Mississippi improved to sub-drought conditions. Some Tropical Storm Lee rainfall event totals: 13.55 at Florence 1E, MS; 13.02 inches at Purvis, MS; 12.82 inches at Forest, MS; 12.59 inches at Walnut Grove, MS; 12.03 inches at Philadelphia 8SSE, MS; 12.00 inches at Philadelphia 5N, MS; 11.64 inches at Hattiesburg 8WSW, MS; 11.33 inches at Prentiss, MS; 11.29 inches at Richland WSW, MS; 11.15 inches at Jackson-Evers Airport, MS; and 11.14 inches at Pearl 3ESE, MS.



High pressure moved into the HSA behind the cold front bringing below normal temperatures. Pleasant temperatures and low humidity prevailed through the 12th. Only some isolated light showers were observed across North and Central Mississippi, Northeast Louisiana, and Southeast Arkansas as an upper level trough moved across the area on the 10th and the 11th.

Humidity began to increase on the $13^{\rm th}$ and $14^{\rm th}$ as a cold front approached the area from the northwest. The front moved off the Mississippi Coast by the evening of the $15^{\rm th}$. Scattered showers of 1.00 inch or less were noted over northwest portions of the HSA. High pressure moved in on the $15^{\rm th}$ and $16^{\rm th}$ and slowly edged eastward by the morning of the $18^{\rm th}$ allowing a return flow of moisture into the region.

Another cold front pushed across the region on the $20^{\rm th}$. Rainfall occurred across the entire HSA with the heaviest falling across the eastern half of Mississippi. Rainfall was present throughout the HSA with amounts ranging from 0.25 of an inch across the western half of the HSA to some isolated 4.00 inch totals in the eastern half. High pressure remained in control of the weather until the $22^{\rm nd}$.

Yet another cold front pushed across the HSA on the $22^{\rm nd}$ and stalled along the Mississippi Coast by the latter part of the $23^{\rm rd}$. Beneficial rainfall occurred across Southeast Arkansas and portions of the Yazoo Delta Region of Mississippi. Rainfall amounts ranged from 0.25 to 2.00 inches with the most significant occurring in Southeast Arkansas. The remainder of the HSA received no rainfall with the exception of some scattered light rain from Central Mississippi to Northeast Mississippi. High pressure moved over the area on the $24^{\rm th}$.

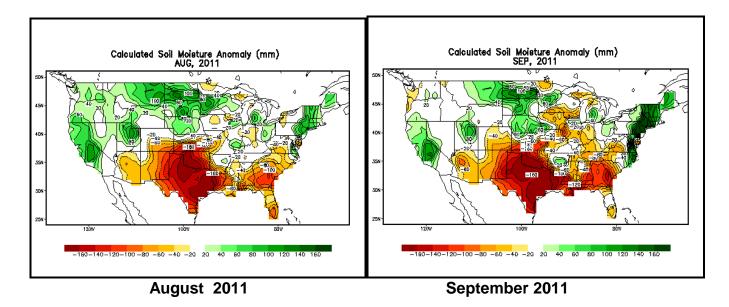
High pressure shifted eastward on the $25^{\rm th}$ allowing moist air to return to the region.

A cold front moved slowly out of Arkansas during the day of the 25th. A squall line formed out ahead of the front on the evening of the 25th producing heavy rainfall from 1.00 to 4.00 inches and two EF-1 tornadoes in Bolivar and Sunflower Counties. Heavy rainfall and some thunderstorm damage also occurred in other portions of the Yazoo Delta, Southeast Arkansas and Northeast Louisiana. The front pushed into Central Mississippi and Northeast Louisiana by the evening hours of the 26th. The front remained across Southeast Arkansas, Northeast Louisiana, and Central portions of Mississippi through the 29th. Some periods of moderate to heavy rainfall occurred across this area during the time period. Event rainfall amounts ranged from 0.50 to 4.50 inches. The heaviest rainfall occurred along a line from Ashley County Arkansas to southern Sharkey County Mississippi. The front finally pushed through the HSA from late on the 29th into the 30th as strong high pressure pushed in from the north.

River and Soil Conditions...

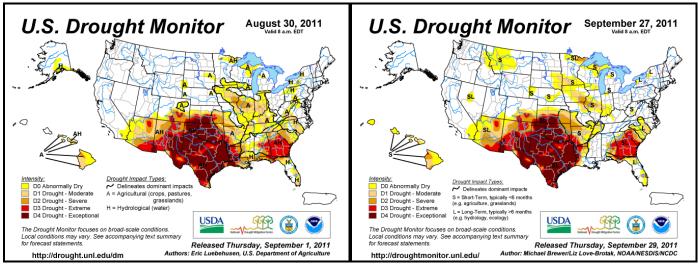
Rainfall from 110 to in excess of 600 percent of normal fell across areas southeast of the Natchez Trace and southern portions of northeast Louisiana. Rainfall northwest of the Trace ranged from 50 to in excess of 300 percent of normal. Most of the excessive rainfall occurred early in the month with Tropical Storm Lee.

The driest locations in the HSA continued to be across Northeast Louisiana and Southeast Arkansas. Would have expected an improvement in the overall calculated monthly soil moisture for September given the excessive rainfall over most areas. Soil moisture deficits from 3.00 to 4.00 inches and 4.00 to 5.00 inches are noted over Southeast Arkansas and Northeast Louisiana, respectively. This is similar to August; however, soil moisture deficits for Southwest and West Mississippi are 4.00 to 5.00 inches which is an increase even though the area had fairly significant rainfall. The remainder of Mississippi showed significant increases in the monthly average soil moisture deficit. This is strange considering the month had a significant rainfall event and lowering evapotranspiration rates.



Soil Moisture anomaly (departure from normal): (25.4mm = 1 inch)

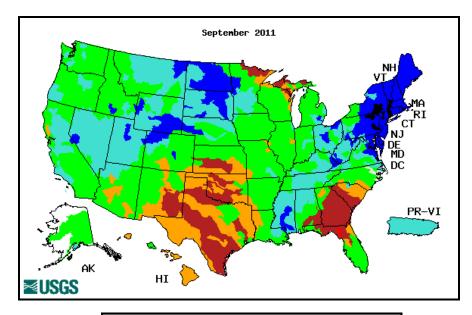
A comparison of the August 30th U.S. Drought Monitor to the September 27th U.S. Drought Monitor showed improvement across much of the HSA. Most of Mississippi was no longer listed as being in drought conditions. West Mississippi and central and southern portions of Northeast Louisiana were now considered as Abnormally Dry (D0). Conditions remained at Severe Drought (D2) across Southeast Arkansas and extreme northern portions of Northeast Louisiana.



August 30, 2011

September 27, 2011

The United States Geological Survey's (USGS) September 2011 river streamflow records were compared with all historical September streamflow records. Streamflow was much above normal across the Pearl River Basin and a portion of the Lower Pascagoula River System. The remainder of Mississippi had above normal streamflow. Streamflow was at or just below normal across Southeast Arkansas and Northeast Louisiana.



Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Heavy rainfall from Tropical Storm Lee produced flash flooding across much of Central and South Mississippi and southern portions of Northeast Louisiana. Dry conditions prior to Lee allowed much of the heavy rainfall to absorb into the dry soils. Storm runoff was less than 40 percent and thus only minor flooding was observed along the Upper and Lower Pearl River basin. Minor to moderate rises occurred along the Black Creek, Leaf, Chickasawhay, Big Sunflower, and Big Black rivers.

Soils moisture remains below normal across much of the area. Temperatures are expected to remain at or above normal while rainfall is expected to remain at or below normal. Even with normal to above normal streamflow over much of the area, flood potentials are as follows:

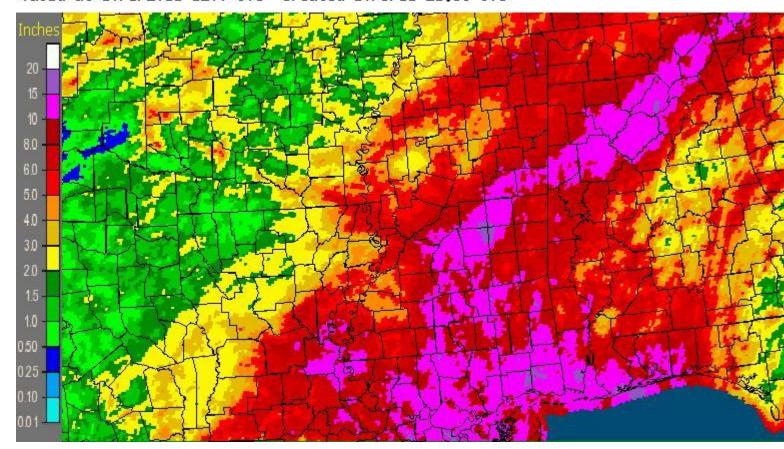
Pearl River System:Below Normal.Yazoo River System:Below Normal.Big Black River System:Below Normal.Homochitto River System:Below Normal.Pascagoula River System:Below Normal.Northeast LA and Southeast AR:Below Normal.Tombigbee River System:Below Normal.Mississippi River:Below Normal.

Rainfall for the month of September

The largest rainfall amounts in the HSA from NWS Cooperative Observer reports during the period from 7 am on August $31^{\rm st}$ until 7 am on September $30^{\rm th}$ were: 16.21 inches at Walnut Grove, MS; 14.97 inches at Purvis, MS; 13.47 inches at Pat Harrison Waterway's Big Creek Water Park, MS; 12.09 inches at Summrall, MS; 11.80 inches at Prentiss, MS; 11.71 inches at Jonesville L&D, LA; 11.63 inches at Goshen Springs, MS; 11.05 inches at Raleigh, MS; 10.79 inches at Gholson, MS; 10.65 inches at Columbia, MS; 10.47 inches at Okatibbee Reservoir, MS; 10.38 inches at Crawford, MS; 10.06 inches at Macon, MS; 10.05 inches at Collins, MS;

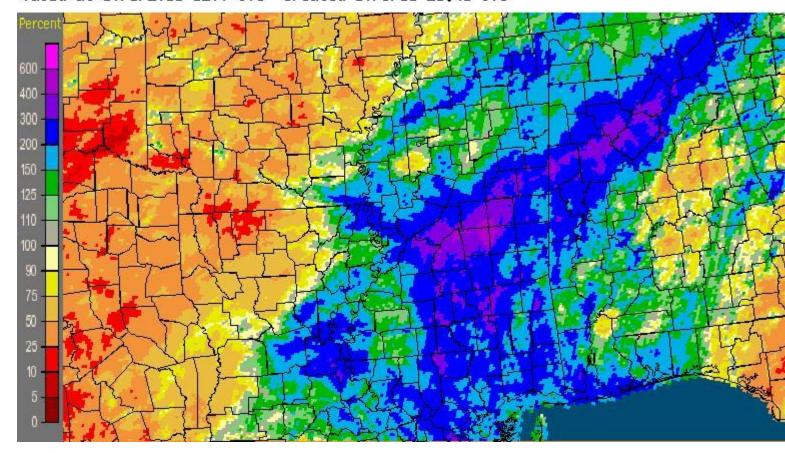
The lowest monthly rainfall totals in the HSA were: 2.26 inches at Moorhead, MS; 3.16 inches at Bastrop, LA; 3.36 inches at Crossett, AR; 3.85 inches at Winona, MS; and 3.99 inches at Rayville, LA.

Mississippi: September, 2011 Monthly Observed Precipitation Valid at 10/1/2011 1200 UTC- Created 10/3/11 21:38 UTC



September 2011 Rainfall Estimates

Mississippi: September, 2011 Monthly Percent of Normal Precipitation Valid at 10/1/2011 1200 UTC- Created 10/3/11 21:41 UTC



2011 September Percent of Normal Rainfall Estimates

Note: Observer rainfall and MPE may differ due to time differences.

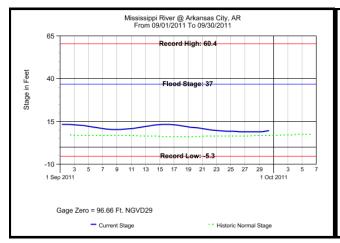
September rainfall for Selected Cities...

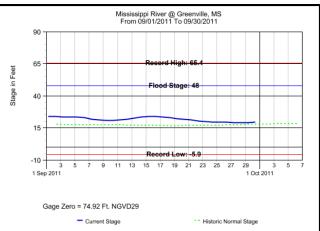
S	eptember	Departure	2011	2011
Departure City	(Airport)	Rainfall	from normal	Rainfall
from Normal				
Jackson, MS	12.72	+9.69	38.34	-4.20
backson, MS	12.72	+9.09	30.34	-4.20
Meridian, MS	6.04	+2.61	43.03	-2.52
Greenwood, MS	3.16	-0.50	27.04	-14.39
Greenville, MS	4.80	+1.72	21.82	-18.75
Hattiesburg, MS	10.58	+6.50	53.09	+0.68
Vicksburg, MS	5.33	+2.44	27.10	-16.81

Mississippi River...

Mississippi River Plots for September, 2011

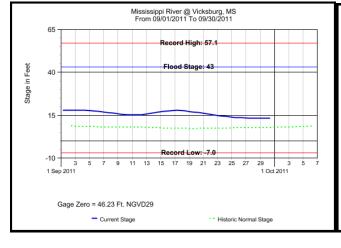
Plots Courtesy of the United States Army Corps of Engineers

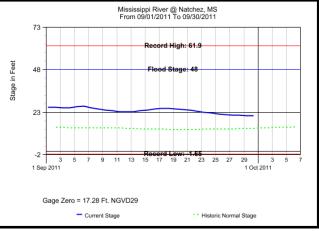




ARKANSAS CITY, MS

GREENVILLE, MS





VICKSBURG, MS

NATCHEZ, MS

Preliminary high and low stages for the month:

Location	FS	High Stage(ft)	Date	Low Stage(ft)	Date
Arkansas City, AR	37	13.34	09/16/11	8.84	09/27/11
Greenville, MS	48	23.90	09/16/11	18.97	09/27/11
Vicksburg, MS	43	18.04	09/02/11	13.17	09/30/11
Natchez, MS	48	26.70	09/05/11	20.85	09/30/11

Total Flood Warning products issued: 13

Total Flood Statement products issued: 82

Total Flood Advisories MS River : 0

Daily Rainfall Products (RRA'S) issued: 30

Daily River Forecast Products (RVS'S) issued: 30

Daily River Stage products (RVA'S) issued: 30

Marty V. Pope

Service Hydrologist 8

Latrice Maxie

Assistant Hydrologist/Observing Program Leader (OPL)

Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.

cc: USGS Little Rock District

USGS Ruston District

USACE Mobile District

USACE Vicksburg District

USACE Mississippi Valley Division

USGS Mississippi District

SRH Climate, Weather and Water Division

Lower Mississippi River Forecast Center

Pearl River Valley Water Supply District

Hydrologic Information Center

Southern Region Climate Center

Pat Harrison Waterway District

Pearl River Basin Development District